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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,112

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Joachim Pitzler

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EXAMINER

HUG, ERIC J

ART UNIT

PAPER NUMBER

1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,112	Applicant(s) PITZLER ET AL.	
	Examiner Eric Hug	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/31/06 to 5/14/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/10/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-5, 8-13, 15, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nilsson et al (US 7,514,030).

Nilsson discloses an industrial fabric, such as one used as a forming fabric in manufacture of paper (col. 1, lines 17-21), wherein the fabric is calendered to produce a smooth, permanently deformed surface. In a paper making machine, this surface would constitute the paper contacting side. The calendering device comprises two rolls which form a pressure nip, preferably at least one of the rolls is heated. See column 2, lines 58-67. Figure 1 shows how calendered yarns become flattened relative to other yarns. This includes the creation of smoothed cross-overs and knuckles formed by overlapping MD and CD yarns, resulting in a fabric not only having a flatter surface but also having a greater fiber support area. See column 2, lines 11-35, column 5, lines 55-62, column 6, lines 56-65, column 8, lines 32-42, regarding reshaping knuckles. The calendering pressure is in the range of 0 to 500 kN/m, and the

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temperature of the heated roll(s) is in a range from room temperature to 300°C. See column 4, lines 21-32.

Therefore, regarding independent claim 1, Nilsson discloses the claimed forming sieve (forming fabric) woven from at least a single layer of MD and CMD threads (MD and CD yarns) wherein the floats and knuckles of the threads on the paper side surface are reshaped by pressure (calendering) and heat (heated calender rolls).

Regarding independent claim 15, Nilsson discloses the claimed method of forming a sieve for the wet end section of a paper machine (forming fabric) comprising calendering with a plurality of rollers using a combination of pressure and heat to reshape the thread inflection regions (knuckles and cross-overs) on the paper side of the fabric.

Regarding claim 2, the yarns are made of materials of thermoplastic materials such as polyester or polyamide. See column 3, lines 58-65.

Regarding claims 3, 4, 19, and 20, the temperature of room temperature to 300°C encompasses the claimed temperature ranges.

Regarding claims 5 and 18, the pressure range of 0-500 kN/m (equivalently 0-500 kPa) encompasses the claimed pressure range.

Regarding claims 8-10, a caliper (height) reduction of up to 30% is obtained, see column 7, lines 43-52. This corresponds to the reduction in height of the calendered yarns at the knuckles.

Regarding claim 11, the calendering of the fabric surface to produce flattened yarns and increased knuckle area at the paper surface is deemed to also create the claimed "thread ellipses".

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Regarding claim 12, the fabric can be calendered to obtain a total contact area of up to about 45%, see column 7, lines 43-52.

Regarding claim 13, the air permeability can be reduced as much as 30%, see column 4, lines 50-52. The permeability is dependent on the void size of the fabric, thus it is deemed that the void size is decreased accordingly.

2. Claims 1-7, 15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gstrein et al (WO 97/01431) [cited by Applicant].

Gstrein discloses a woven papermaking fabric, such as one for the forming section of a paper machine, and discloses a process for molding the paper-side surface of the papermaking fabric by passing the fabric between two heated rolls forming a press nip. The fabric is woven from machine direction yarns and cross-machine direction yarns in a manner that creates surface floats (p. 5, lines 18-28). The fabric is shaped by the application of heat and pressure, resulting in a smoother surface. Treatment is performed over the entire width of the fabric. Figure 9 illustrates a papermaking fabric 27 molded between two rolls 25, 26. One or both rolls may be heated. See page 7, lines 7-20. The fabric is passed through the nip one or more times until the desired smoothness is met. In this instance, floats and knuckles are reshaped. See also page 8, lines 16-23. An illustrative temperature of 150°C pressure range of 20-150 kp/cm² are disclosed (p. 7, lines 21-26), and a typical temperature range is 130-240°C (p. 8, line 2).

Therefore, regarding independent claim 1, Gstrein discloses the claimed forming sieve (forming fabric) woven from at least a single layer of MD and CMD threads (machine direction

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and cross-machine direction yarns) wherein the floats and knuckles of the threads on the paper side surface are reshaped by pressure (roll nip) and heat (heated rolls).

Regarding independent claim 15, Gstrein discloses the claimed method of forming a sieve for the wet end section of a paper machine (forming fabric) comprising calendering with a plurality of rollers using a combination of pressure and heat to reshape the thread inflection regions (knuckles and floats) on the paper side of the fabric.

Regarding claims 2, 6, and 7, yarns are made of materials such as polyester or polyamide, and have diameters up to 0.3 to 0.6 mm. See page 6, lines 13-26.

Regarding claims 3, 4, 19, and 20, the temperature of 150°C falls within the claimed temperature ranges. The temperature range of 130-240°C overlaps the claimed temperature ranges.

Regarding claims 5 and 18, the pressure range of 20-150 kp/cm² is equivalently about 20.3 to 153 kPa [9.81 kp (kiloponds) = 1 N; 9.81 kp/cm² = 1 N/cm² = 10 kPa]. This overlaps the claimed pressure range.

3. Claims 1-5, 15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Cedercreutz (GB 2012327) [cited by Applicant].

Cedercreutz discloses a paper machine felt screen or wire made from thermoplastic filaments, such as polyamide, polyester or polypropylene, which is smoothed by application of heat or pressure. The felt or wire 1 is simultaneously heated and subjected to pressure by passing through a heated roller nip 6, formed by a lower heated roll 4 and upper roll 5, therein softening and compressing the surface to be in contact with the paper. Further heating can be provided by

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hot-air hood 7. The technique is applicable to forming wires, press felts, and drying wires (page 2, lines 21-24). Flattening of the filaments is achieved particularly at the crossing points of the filaments contacting the paper side of the web (page 1, lines 84-102).

Therefore, regarding independent claim 1, Cedercreutz discloses the claimed forming sieve (paper machine forming wire) woven from at least a single layer of MD and CMD threads (wire filaments) wherein the floats and knuckles of the threads on the paper side surface (crossing points) are reshaped by pressure (roll nip) and heat (heated rolls/hot air hood).

Regarding independent claim 15, Cedercreutz discloses the claimed method of forming a sieve for the wet end section of a paper machine (forming wire) comprising calendering with a plurality of rollers using a combination of pressure and heat to reshape the thread inflection regions (crossing points) on the paper side of the fabric.

Regarding claim 2, polyamide is disclosed (page 2, lines 33).

Regarding claims 3, 4, 19, and 20, the temperature can span a range of 20-260°C (page 2, line 4), which encompasses the claimed temperature ranges.

Regarding claims 5 and 18, compressive pressures can be up to 200 kp/width cm (page 2, line 10), which is approximately 203 kPa [see conversion above for Gstrein]. This encompasses the claimed pressure range.

Allowable Subject Matter

Claims 14, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 14 is allowable for providing a fabric with any one or more of the claimed properties varying across each point of the sieve width.

Claims 16 and 17 are allowable for providing a roller that can be variably adjusted in pressure or temperature across the width of the sieve to obtain a tailored cross-sectional profile.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harvey (US 4,457,968)

Trokhan (US 4,239,065)

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571) 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/
Primary Examiner, Art Unit 1791